

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements in and relating to Rotary Offset Printing Machines

We, AGFA-GEVAERT AKTIENGESellschaft, a body corporate recognised under German Law, of Leverkusen, Germany, do hereby declare the invention, for which we pray that

5 a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention is concerned with improvements in and relating to rotary offset printing machines, more especially office duplicating machines.

The invention is primarily concerned with a cleaning or damping device for such

15 machines.

Known devices of this type are fixed to the machine and extend over the full width of the printing machine cylinder, whereby they considerably affect the accessibility of the cylinder, particularly if in addition to a cleaning mechanism for the rubber blanket a damping mechanism for the stencils is provided. Since with these devices both the liquid-charging and also the changing of a wiper band must take place in the position in which it is used, the construction is relatively expensive. In smaller machines, e.g. office duplicating machines, the fitting of cleaning and damping mechanisms is therefore often

30 omitted. The cleaning of the rubber blanket after changing the printing forme, and the pre-damping of the new printing forme are effected in a time-consuming manner by hand with a cloth or by means of a pad, although it is precisely in these machines, on which very small editions are generally printed, that these operations represent such a considerable part of the total printing time.

40 The present invention provides in the first place a cleaning or damping device for cylinders of rotary offset printing machines, said device including a housing of width smaller

than the axial length of a cylinder to be cleaned or damped therewith and also including mounting means for a wiper band and means for attaching the device to and detaching it from a correspondingly constructed rotary offset printing machine in a manner such that it can be moved axially of the cylinder while the wiper band is in contact with the cylinder.

The device is preferably of a size such that the housing can be grasped by the hand across its width for movement to and fro across the cylinder.

With this arrangement, the printing machine cylinders are freely accessible during the printing process. The laterally displaceable wiping device can be made so narrow that it can be held in the hand like a hand-brush.

The device advantageously includes a pad of resilient material arranged to act as backing for the area of wiper material to be in contact with the cylinder. There may also be included between an area of the housing corresponding to the contact area of the wiper band with the cylinder and a said mounting means projections for preventing the wiper material from lateral movement with reference to the housing.

For use with a wiper band in web form, the device may include a mounting for a roll of clean wiper material and a spool for taking up soiled wiper material, non-return winding means being provided for the spool. Friction braking means may be provided for the clean wiper material. The non-return winding means may include a knob with a stub spindle axially engageable with the spool and, when engaged, co-operating with spring-loaded ratchet means on the housing for rotation limited to the winding direction. When the wiper band has been advanced section-by-

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section through the device by means of the rotary knob and is completely spent, after disengaging the knob, the band can be pulled out of the device and replaced by a new one.

5 The braking means ensures at all times adequate tensioning of the wiper band, which can consist in a known manner of an absorbent fabric or paper web.

10 The invention further provides, in combination, a device as set forth above and a rotary offset printing machine, the construction being such that by the said attachment means between the device and the machine, the device can pivot on support means of the machine in a radial direction with respect to the said cylinder, the device being provided with stop means for co-operation with stop means on the machine to limit the pivoting movement in a direction towards the surface of the cylinder. These stop means prevent the cleaning or damping device falling into the recesses usually provided on the printing cylinders to accommodate the tensioning devices.

25 The cleaning or damping process can consequently be carried out in a particularly effective and time-saving manner on the revolving cylinder, as with devices which are built into the machine.

30 In one advantageous construction the said support means and the stop means on the machine are both bars parallel to the axis of the cylinder, on a first of which the device can move axially and pivot by attachment means in the form of a pair of oppositely disposed hook-shaped recesses in the housing, and against the second of which the device can abut, whenever in a cleaning or damping position, by a pair of oppositely disposed lugs on the housing. The said bars of the machine may be located symmetrically between the forme or stencil cylinder and the offset cylinder, which are of the same diameter, so that a cleaning or damping device can be applied to each of the said two cylinders in turn.

35 The invention still further provides, in combination, a cleaning or damping device as set forth above and a device for charging a wiper band thereon with liquid, said charging device being adapted to have the cleaning or damping device placed upon it with the wiper band in contact with a liquid-charging means. The liquid-charging device may include a container, a container cover with well, and as liquid-charging means a resilient, absorbent element in the well. Preferably the cleaning or damping device and the liquid-charging device are of such complementary constructions that when the cleaning or damping device is in place on the liquid-charging device a substantial seal is provided between the liquid and the ambient air.

65 The invention is illustrated by way of ex-

ample in the accompanying drawings, in which:

Fig. 1 is a perspective view of a cleaning or damping device in place on a rotary offset office duplicating machine.

Fig. 2 is an end elevation corresponding to Fig. 1.

Fig. 3 is a section on an enlarged scale through a liquid-charging device with the cleaning or damping device placed upon it.

Fig. 4 is a section on the line IV—IV of Fig. 3, and

Fig. 5 is a still further enlarged section through the winding spool for the wiper band.

Referring to the drawings, as shown in Figs. 1 and 2, on the housing 1 of a rotary offset office duplicating machine, symmetrically arranged with respect to a stencil cylinder 2 and an offset cylinder 3 of the same diameter, are fitted guide bars 4 and 5. With the bar 5 engage hook-shaped recesses 6b of the housing 6 of a cleaning or damping device according to the invention. Lugs 6c of the housing which meet the bar 4 form stop means preventing the cleaning device from falling into a recess 3b in the offset cylinder 3.

As can be seen from Fig. 1, the housing 6 of the cleaning device is made narrow enough so that it can be held in the operator's hand like a hand-brush. In order to facilitate handling, finger-holds 6a in the form of parallel ribs are provided on the side walls of the housing 6.

In Fig. 2 it is indicated in broken lines that the cleaning device, owing to the fact that the bars 4 and 5 are symmetrically arranged with respect to the cylinders 2 and 3, can also be fitted so that it co-operates with the stencil cylinder 2 instead of the offset cylinder 3. In the former case it serves for cleaning a conventional rubber blanket 3a on the offset cylinder 3. In the latter case, pre-damping or "etching" of a printing stencil 2a on the stencil cylinder can be carried out with the device. In this case also the bar 4 and lugs 6c prevent the device falling into a recess 2b of the stencil cylinder 2 which accommodates conventional tensioning means for the stencil.

As illustrated in Fig. 3, a winding spool 7 for a wiper band 8 is arranged in the housing 6 of the cleaning device. The winding spool 7 is attached to a milled rotary knob 8f, seen in Fig. 2, and carries attachment means for the wiper band in the form of ratchet type teeth 7a provided on the periphery of the spool.

The wiper band consists of absorbent fabric or paper. After removing a cover 9, a supply roll 10 is inserted in the housing 6 and its leading end is attached to the teeth 7a of the winding spool 7. The cover 9 can be anchored in the housing 6 by means of hooks 9a and clamped thereto by pressing a lug

9b into a corresponding recess 6d in the housing. In addition, the cover has rivetted thereto by a rivet 12 a blade spring 13 to which is attached a roller 11 fitting behind a lug 5 6e of the housing 6.

The roller 11 also serves as braking roller to tension the wiper band. When the wiper band is drawn from the supply roll by means of the winding spool 7, by turning the knob 10 8f, which in a manner described in greater detail below is prevented from turning backwards, the section of the band situated between the braking roller 11 and the winding spool 7 remains in a tensioned condition. As 15 a backing for the part of the wiper band which meets the machine cylinder during the cleaning or "etching" process, a support 14 consisting of a pad of resilient material, e.g. rubber or felt, is provided, which is fixed 20 in a section 6f of the housing 6, the curvature of which corresponds to that of the printing machine cylinder.

Outside this curved section 6f, guide lugs are provided on the housing 6, to which the 25 flexible wiper band tends to conform, as can be seen from Fig. 4, which shows two of these lugs 6g and 6h. A further lug 6i is shown in Fig. 3. These guide lugs prevent lateral deviation of the band with respect to the housing as a result of lateral wiping movement of the cleaning device with respect to 30 the cylinder.

As shown in Fig. 5, the winding spool 7 is inserted in a bore 6n of the housing 6 and is secured against axial displacement by means 35 of raised lugs 7b, 7c. The knob 8f has a stub spindle 8a which is provided with a groove 8b. In the groove 8b fit two shanks 20a and 20b of a U-shaped catch spring engaging through slots 7d and 7e in the winding spool 7. They hold a shoulder 8c formed on 40 the knob 8f against the spool 7.

On the spindle 8a of the knob 8f there is also a cut-out section 8d which engages with 45 a corresponding projecting internal surface 7e of the spool 7 and thereby connects the knob 8f to the spool 7 so that the two rotate together. The knob 8f also carries a toothed section 8e in which engages a ratchet pin 50 22 projecting through the housing 6 and attached thereto by a blade spring 21, thereby preventing the spool 7 turning backwards when the rotary knob 8f is pushed in. However, when the knob 8f is pulled out of the 55 spool against the catch spring 20a, 20b, a roll 23 of spent wiper band can easily be pulled off the spool 7.

A liquid-charging device is shown in Fig. 3, a container or tray 16 for cleaning or 60 damping agent being set down for example on a table leaf 15. The housing 6 of the cleaning or damping device is shown placed on this device. Extending upwards in a well cover 17 of the container 16 is inserted a 65 resilient, absorbent element 18, e.g. a block

of foam or felt, which stands in cleaning or damping agent 19 and delivers it to the wiper band when brought into contact with it. The wetting effect is increased when the device is pressed onto the block 18 before being 70 removed. The cover 17 also contains a filling aperture 17a which can be closed by means of a screw cap 24.

Sides 17b, 17c of the well cover 17, when the cleaning device is set down on the wetting 75 block, confine the wiper band and the side walls of the housing 6 and thus prevent excessive evaporation of the cleaning or damping agent.

While the housing 6 is on the device 16, 80 17, the section of the cleaning band adjacent to the block 18 is kept moist and when subsequently placed on the machine cylinder therefore produces a powerful cleaning or 85 damping effect. While the cylinder is revolving, the hand device is moved sideways on the machine cylinder until the whole of the machine cylinder has come into contact with the wiper band. When the part of the wiper band used has become so soiled that it 90 no longer has a cleaning or damping effect, the band is advanced by means of the knob 8f until an unused section of the band lies over the surface of the support 14. This section is then moistened in the same way by 95 placing it on the tray 16, 17.

WHAT WE CLAIM IS:—

1. A cleaning or damping device for cylinders of rotary offset printing machines, said device including a housing of width smaller 100 than the axial length of a cylinder to be cleaned or damped therewith and also including mounting means for a wiper band and means for attaching the device to and detaching it from a correspondingly constructed 105 rotary offset printing machine in a manner such that it can be moved axially of the cylinder while the wiper band is in contact with the cylinder.

2. A device as claimed in claim 1, of a size such that the housing can be grasped by the hand across its width for movement to and fro across the cylinder. 110

3. A device as claimed in claim 1 or 2, including a pad of resilient material arranged to act as backing for the area of wiper material to be in contact with the cylinder. 115

4. A device as claimed in any one of claims 1—3, including between an area of the housing corresponding to the contact area of the wiper band with the cylinder, and a said mounting means, projections for preventing 120 the wiper material from lateral movement with reference to the housing.

5. A device as claimed in any one of claims 1—4, for use with a wiper band in web form, said device including a mounting for a roll of clean wiper material and a spool 125 for taking up soiled wiper material, non-re-

turn winding means being provided for the spool.

5 6. A device as claimed in claim 5, including friction braking means for the clean wiper material.

7. A device as claimed in claim 5 or 6, in which the non-return winding means includes a knob with a stub spindle axially engageable with the spool and, when engaged, co-operating with spring-loaded ratchet means in the housing for rotation limited to the winding direction.

8. In combination, a device as claimed in any one of claims 1—7 and a rotary offset printing machine, the construction being such that by the said attachment means between the device and the machine, the device can pivot on support means of the machine in a radial direction with respect to the said cylinder, the device being provided with stop means for co-operation with stop means on the machine to limit the pivoting movement in a direction towards the surface of the cylinder.

9. A combination as claimed in claim 8, in which the said support means and the stop means on the machine are both bars parallel to the axis of the cylinder, on a first of which the device can move axially and pivot by attachment means in the form of a pair of oppositely disposed hook-shaped recesses in the housing, and against the second of which the device can abut, whenever in a cleaning or damping position, by a pair of oppositely disposed lugs on the housing.

10. A combination as claimed in claim 9, in which the said bars of the machine are located symmetrically between the forme or stencil cylinder and the offset cylinder, which are of the same diameter, so that a cleaning

or damping device can be applied to each of the said two cylinders in turn.

11. In combination, a device as claimed in any one of claims 1—7 and a device for charging a wiper band thereon with liquid, said charging device being adapted to have the cleaning or damping device placed upon it with the wiper band in contact with a liquid-charging means.

12. A combination as claimed in claim 11, in which the liquid-charging device includes a container, a container cover with well, and as liquid-charging means a resilient, absorbent element in the well.

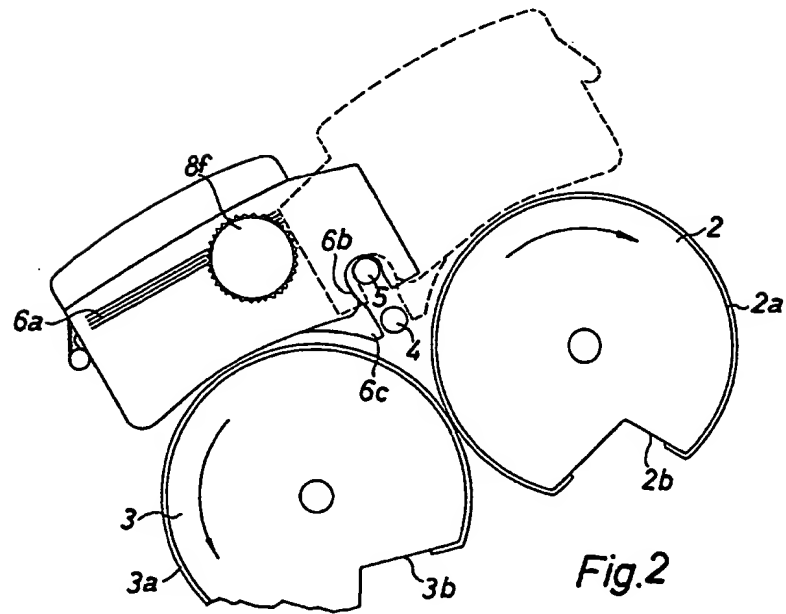
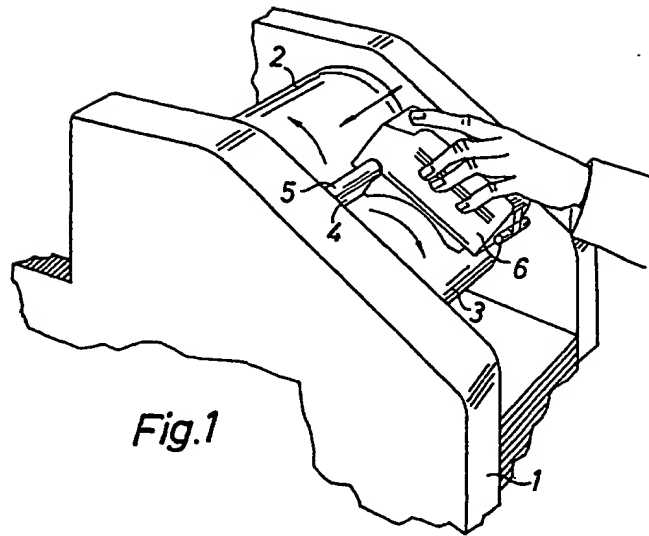
13. A combination as claimed in claim 12, in which the cleaning or damping device and the liquid-charging device are of such complementary constructions that when the cleaning or damping device is in place on the liquid-charging device a substantial seal is provided between the liquid and the ambient air.

14. A cleaning or damping device as claimed in claim 1, substantially as described herein with reference to the accompanying drawings.

15. A combination cleaning or damping device and rotary offset office duplicating machine substantially as described herein with reference to the accompanying drawings.

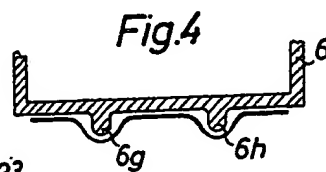
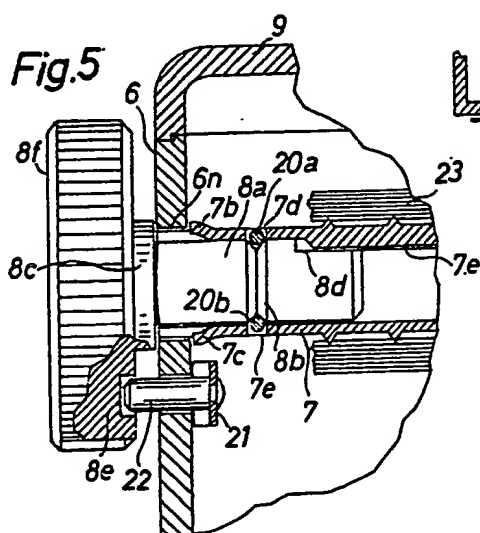
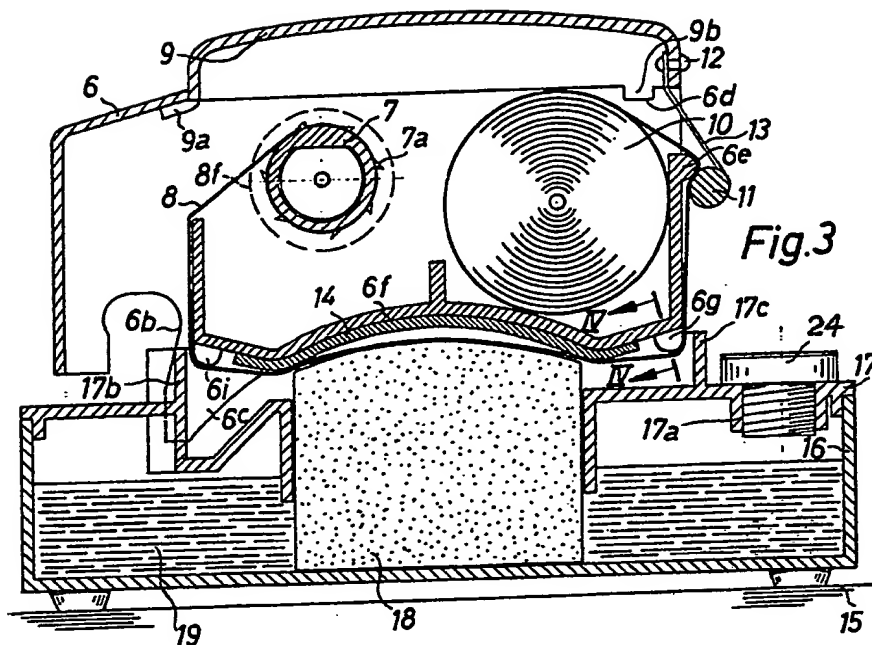
16. A combination cleaning or damping device and liquid-charging device substantially as described herein with reference to the accompanying drawings.

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2 SHEETS

This drawing is a reproduction of
the Original on a reduced scale.
SHEETS 1 & 2



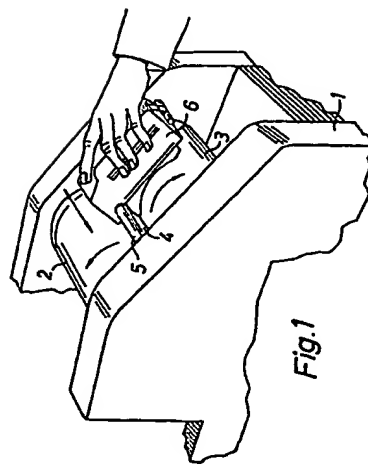


Fig. 1

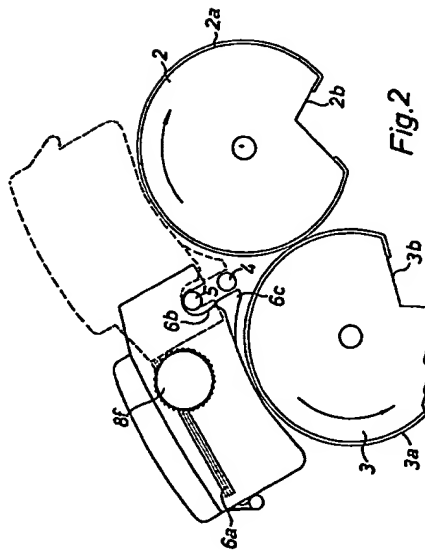


Fig. 2

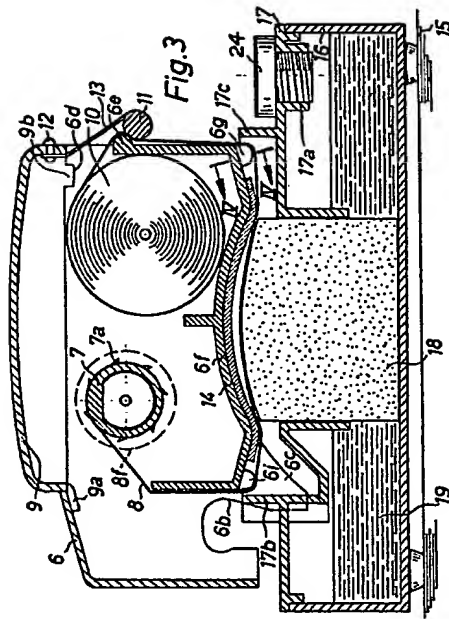


Fig. 3

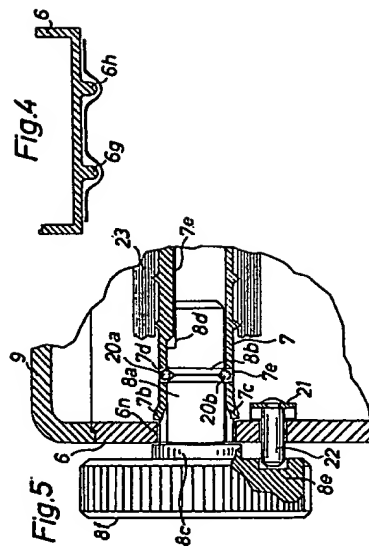


Fig. 4

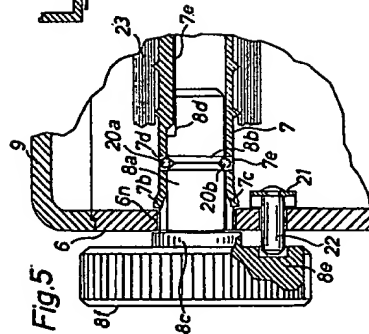


Fig. 5